Improving Attention through Training

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Abstract

Human are known to have limited ability to attend to multiple stimuli simultaneously, accounting for many human errors in driving, aircraft control, and other human-machine interfaces. A critical mission of cognitive psychology is to understand how people process information and try to optimize the limited processing resources. Here we examined the role of implicit learning in optimizing attention. Participants searched for two target colors (such as red and green) among other colored objects. Unbeknownst to them, one target color appeared three-times more often than the other. We showed that participants rapidly acquired a preference for the high-frequency color, by producing a faster reaction time, even though they may not be aware of the frequency discrepancy. This preference reflected an implicit sensitivity to ongoing frequency discrepancies between the two colors. In a subsequent task in which the frequencies of two colors were no longer relevant, the colors did not differentially influence performance as indicated by reaction time. We conclude that implicit statistical learning may facilitate attentional allocation.